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Fitzgerald, David

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<141> 2003-10-31

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atacgggtcta	cttgttttcc	ctgtgagaac	agggggtcac	tggggactcg	cacgcaaggg	8460
gtacccgagg	aagagccttc	caggcagaga	gaaggaaccg	cgagtgtctg	gagcaggggt	8520
gggtgggcag	gaggggcctg	cgccaggact	gcaggggcag	agcaggctgg	gggccttcgg	8580
gaggggtggc	cgggtggagg	gtgttgccgg	cctcgacagg	ggcaggaggt	tcgtcacagc	8640
gaggacagag	cccggccccg	tgggagccgg	agagcagcag	gcctgaatga	cccagggttt	8700
cctaatagca	gggccccctc	cttgtgtggg	tccccctact	ttgcctctct	gctgggacat	8760
ccttccttga	aaggagagag	aggaccacat	gctgccctt	ccccagacac	agtccagaca	8820
ggcccaggcc	acagccctgg	gcagacgcaa	aactcccagg	ggcctggact	gggataggga	8880
ggaggcagca	gggagggact	gacctatgtc	cacacaccac	aagggactcc	cagaggcggg	8940
tggggcgagg	ctgggagcag	gggccttagc	cctcagacca	gcccactcac	cctggggagt	9000
tcctgcccc	cagcctgccc	agcttacagg	cctgggggca	ggggcaggcc	agcacaggcc	9060

<210> 20

<211> 418

<212> PRT

<213> Homo sapiens

<400> 20

Met	Leu	Pro	Trp	Thr	Ala	Leu	Gly	Leu	Ala	Leu	Ser	Leu	Arg	Leu	Ala
1				5				10						15	
Leu	Ala	Arg	Ser	Gly	Ala	Glu	Arg	Gly	Pro	Pro	Ala	Ser	Ala	Pro	Arg
		20						25					30		
Gly	Asp	Leu	Met	Phe	Leu	Leu	Asp	Ser	Ser	Ala	Ser	Val	Ser	His	Tyr
		35					40					45			
Glu	Phe	Ser	Arg	Val	Arg	Glu	Phe	Val	Gly	Gln	Leu	Val	Ala	Pro	Leu
	50					55					60				
Pro	Leu	Gly	Thr	Gly	Ala	Leu	Arg	Ala	Ser	Leu	Val	His	Val	Gly	Ser
65					70				75					80	
Arg	Pro	Tyr	Thr	Glu	Phe	Pro	Phe	Gly	Gln	His	Ser	Ser	Gly	Glu	Ala
			85					90						95	
Ala	Gln	Asp	Ala	Val	Arg	Ala	Ser	Ala	Gln	Arg	Met	Gly	Asp	Thr	His
		100						105					110		
Thr	Gly	Leu	Ala	Leu	Val	Tyr	Ala	Lys	Glu	Gln	Leu	Phe	Ala	Glu	Ala
		115					120						125		

Ser Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp Val Thr Asp
 130 135 140
 Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu Leu Lys Asp
 145 150 155 160
 Leu Gly Val Thr Val Phe Ile Val Ser Thr Gly Arg Gly Asn Phe Leu
 165 170 175
 Glu Leu Ser Ala Ala Ala Ser Ala Pro Ala Glu Lys His Leu His Phe
 180 185 190
 Val Asp Val Asp Asp Leu His Ile Ile Val Gln Glu Leu Arg Gly Ser
 195 200 205
 Ile Leu Asp Ala Met Arg Pro Gln Gln Leu His Ala Thr Glu Ile Thr
 210 215 220
 Ser Ser Gly Phe Arg Leu Ala Trp Pro Pro Leu Leu Thr Ala Asp Ser
 225 230 235 240
 Gly Tyr Tyr Val Leu Glu Leu Val Pro Ser Ala Gln Pro Gly Ala Ala
 245 250 255
 Arg Arg Gln Gln Leu Pro Gly Asn Ala Thr Asp Trp Ile Trp Ala Gly
 260 265 270
 Leu Asp Pro Asp Thr Asp Tyr Asp Val Ala Leu Val Pro Glu Ser Asn
 275 280 285
 Val Arg Leu Leu Arg Pro Gln Ile Leu Arg Val Arg Thr Arg Pro Glu
 290 295 300
 Glu Ala Gly Pro Glu Arg Ile Val Ile Ser His Ala Arg Pro Arg Ser
 305 310 315 320
 Leu Arg Val Ser Trp Ala Pro Ala Leu Gly Ser Ala Ala Ala Leu Gly
 325 330 335
 Tyr His Val Gln Phe Gly Pro Leu Arg Gly Gly Glu Ala Gln Arg Val
 340 345 350
 Glu Val Pro Ala Gly Arg Asn Cys Thr Thr Leu Gln Gly Leu Ala Pro
 355 360 365
 Gly Thr Ala Tyr Leu Val Thr Val Thr Ala Ala Phe Arg Ser Gly Arg
 370 375 380
 Glu Ser Ala Leu Ser Ala Lys Ala Cys Thr Pro Asp Gly Pro Arg Pro
 385 390 395 400
 Arg Pro Arg Pro Val Pro Arg Ala Pro Thr Pro Gly Thr Ala Ser Arg
 405 410 415
 Glu Pro

<210> 21
 <211> 415
 <212> PRT
 <213> Mus musculus

<400> 21
 Met Leu Phe Trp Thr Ala Phe Ser Met Ala Leu Ser Leu Arg Leu Ala
 1 5 10 15
 Leu Ala Arg Ser Ser Ile Glu Arg Gly Ser Thr Ala Ser Asp Pro Gln
 20 25 30
 Gly Asp Leu Leu Phe Leu Leu Asp Ser Ser Ala Ser Val Ser His Tyr
 35 40 45
 Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val Ala Thr Met
 50 55 60
 Ser Phe Gly Pro Gly Ala Leu Arg Ala Ser Leu Val His Val Gly Ser
 65 70 75 80
 Gln Pro His Thr Glu Phe Thr Phe Asp Gln Tyr Ser Ser Gly Gln Ala
 85 90 95
 Ile Arg Asp Ala Ile Arg Val Ala Pro Gln Arg Met Gly Asp Thr Asn

			100					105					110				
Thr	Gly	Leu	Ala	Leu	Ala	Tyr	Ala	Lys	Glu	Gln	Leu	Phe	Ala	Glu	Glu		
		115					120					125					
Ala	Gly	Ala	Arg	Pro	Gly	Val	Pro	Lys	Val	Leu	Val	Trp	Val	Thr	Asp		
	130					135					140						
Gly	Gly	Ser	Ser	Asp	Pro	Val	Gly	Pro	Pro	Met	Gln	Glu	Leu	Lys	Asp		
145				150						155					160		
Leu	Gly	Val	Thr	Ile	Phe	Ile	Val	Ser	Thr	Gly	Arg	Gly	Asn	Leu	Leu		
			165						170					175			
Glu	Leu	Leu	Ala	Ala	Ala	Ser	Ala	Pro	Ala	Glu	Lys	His	Leu	His	Phe		
		180					185						190				
Val	Asp	Val	Asp	Asp	Leu	Pro	Ile	Ile	Ala	Arg	Glu	Leu	Arg	Gly	Ser		
	195					200						205					
Ile	Thr	Asp	Ala	Met	Gln	Pro	Gln	Gln	Leu	His	Ala	Ser	Glu	Val	Leu		
	210				215						220						
Ser	Ser	Gly	Phe	Arg	Leu	Ser	Trp	Pro	Pro	Leu	Leu	Thr	Ala	Asp	Ser		
225				230						235					240		
Gly	Tyr	Tyr	Val	Leu	Glu	Leu	Val	Pro	Ser	Gly	Lys	Leu	Ala	Thr	Thr		
			245					250						255			
Arg	Arg	Gln	Gln	Leu	Pro	Gly	Asn	Ala	Thr	Ser	Trp	Thr	Trp	Thr	Asp		
		260					265						270				
Leu	Asp	Pro	Asp	Thr	Asp	Tyr	Glu	Val	Ser	Leu	Leu	Pro	Glu	Ser	Asn		
	275					280						285					
Val	His	Leu	Leu	Arg	Pro	Gln	His	Val	Arg	Val	Arg	Thr	Leu	Gln	Glu		
	290				295					300							
Glu	Ala	Gly	Pro	Glu	Arg	Ile	Val	Ile	Ser	His	Ala	Arg	Pro	Arg	Ser		
305				310					315						320		
Leu	Arg	Val	Ser	Trp	Ala	Pro	Ala	Leu	Gly	Pro	Asp	Ser	Ala	Leu	Gly		
			325					330						335			
Tyr	His	Val	Gln	Leu	Gly	Pro	Leu	Gln	Gly	Gly	Ser	Leu	Glu	Arg	Val		
		340						345					350				
Glu	Val	Pro	Ala	Gly	Gln	Asn	Ser	Thr	Thr	Val	Gln	Gly	Leu	Thr	Pro		
	355					360					365						
Cys	Thr	Thr	Tyr	Leu	Val	Thr	Val	Thr	Ala	Ala	Phe	Arg	Ser	Gly	Arg		
	370					375					380						
Gln	Arg	Ala	Leu	Ser	Ala	Lys	Ala	Cys	Thr	Ala	Ser	Gly	Ala	Arg	Thr		
385				390					395						400		
Arg	Ala	Pro	Gln	Ser	Met	Arg	Pro	Glu	Ala	Gly	Pro	Arg	Glu	Pro			
			405					410						415			

<210> 22

<211> 182

<212> PRT

<213> Artificial sequence

<220>

<223> VA domain from collagen XIV

<400> 22

Ile	Ala	Asp	Ile	Val	Ile	Leu	Val	Asp	Gly	Ser	Trp	Ser	Ile	Gly	Arg		
1				5				10					15				
Phe	Asn	Phe	Arg	Leu	Val	Arg	Leu	Phe	Leu	Glu	Asn	Leu	Val	Ser	Ala		
		20					25					30					
Phe	Asn	Val	Gly	Ser	Glu	Lys	Thr	Arg	Val	Gly	Leu	Ala	Gln	Tyr	Ser		
		35				40					45						
Gly	Asp	Pro	Arg	Ile	Glu	Trp	His	Leu	Asn	Ala	Tyr	Gly	Thr	Lys	Asp		
50					55				60								
Ala	Val	Leu	Asp	Ala	Val	Arg	Asn	Leu	Pro	Tyr	Lys	Gly	Gly	Asn	Thr		

65					70					75					80
Leu	Thr	Gly	Leu	Ala	Leu	Thr	Tyr	Ile	Leu	Glu	Asn	Ser	Phe	Lys	Pro
				85					90					95	
Glu	Ala	Gly	Ala	Arg	Pro	Gly	Val	Ser	Lys	Ile	Gly	Ile	Leu	Ile	Thr
			100					105					110		
Asp	Gly	Lys	Ser	Gln	Asp	Asp	Val	Ile	Pro	Pro	Ala	Lys	Asn	Leu	Arg
		115					120					125			
Asp	Ala	Gly	Ile	Glu	Leu	Phe	Ala	Ile	Gly	Val	Lys	Asn	Ala	Asp	Ile
	130					135					140				
Asn	Glu	Leu	Lys	Glu	Ile	Ala	Ser	Glu	Pro	Asp	Ser	Thr	His	Val	Tyr
145					150					155					160
Asn	Val	Ala	Asp	Phe	Asn	Phe	Met	Asn	Ser	Ile	Val	Glu	Gly	Leu	Thr
				165					170					175	
Arg	Thr	Val	Cys	Ser	Arg										
			180												

<210> 23
 <211> 183
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VA domain from collagen VII

<400> 23															
Ala	Ala	Asp	Ile	Val	Phe	Leu	Leu	Asp	Gly	Ser	Ser	Ser	Ile	Gly	Arg
1				5					10					15	
Ser	Asn	Phe	Arg	Glu	Val	Arg	Ser	Phe	Leu	Glu	Gly	Leu	Val	Leu	Pro
			20					25					30		
Phe	Ser	Gly	Ala	Ala	Ser	Ala	Gln	Gly	Val	Arg	Phe	Ala	Thr	Val	Gln
		35					40					45			
Tyr	Ser	Asp	Asp	Pro	Arg	Thr	Glu	Phe	Gly	Leu	Asp	Ala	Leu	Gly	Ser
	50					55					60				
Gly	Gly	Asp	Val	Ile	Arg	Ala	Ile	Arg	Glu	Leu	Ser	Tyr	Lys	Gly	Gly
65					70					75					80
Asn	Thr	Arg	Thr	Gly	Ala	Ala	Ile	Leu	His	Val	Ala	Asp	His	Val	Phe
				85					90					95	
Leu	Pro	Gln	Leu	Ala	Arg	Pro	Gly	Val	Pro	Lys	Val	Cys	Ile	Leu	Ile
			100					105					110		
Thr	Asp	Gly	Lys	Ser	Gln	Asp	Leu	Val	Asp	Thr	Ala	Ala	Gln	Arg	Leu
		115					120					125			
Lys	Gly	Gln	Gly	Val	Lys	Leu	Phe	Ala	Val	Gly	Ile	Lys	Asn	Ala	Asp
	130					135					140				
Pro	Glu	Glu	Leu	Lys	Arg	Val	Ala	Ser	Gln	Pro	Thr	Ser	Asp	Phe	Phe
145					150					155					160
Phe	Phe	Val	Asn	Asp	Phe	Ser	Ile	Leu	Arg	Thr	Leu	Leu	Pro	Leu	Val
				165					170					175	
Ser	Arg	Arg	Val	Cys	Thr	Thr									
			180												

<210> 24
 <211> 182
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VA domain from collagen XII

<400> 24

Lys	Ala	Asp	Ile	Val	Phe	Leu	Thr	Asp	Ala	Ser	Trp	Ser	Ile	Gly	Asp
1				5					10					15	
Asp	Asn	Phe	Asn	Lys	Val	Val	Lys	Phe	Ile	Phe	Asn	Thr	Val	Gly	Ala
			20					25					30		
Phe	Asp	Glu	Val	Asn	Pro	Ala	Gly	Ile	Gln	Val	Ser	Phe	Val	Gln	Tyr
		35					40					45			
Ser	Asp	Glu	Val	Lys	Ser	Glu	Phe	Lys	Leu	Asn	Thr	Tyr	Asn	Asp	Lys
	50					55					60				
Ala	Leu	Ala	Leu	Gly	Ala	Leu	Gln	Asn	Ile	Arg	Tyr	Arg	Gly	Gly	Asn
65					70					75					80
Thr	Arg	Thr	Gly	Lys	Ala	Leu	Thr	Phe	Ile	Lys	Glu	Lys	Val	Leu	Thr
				85					90					95	
Trp	Glu	Ser	Gly	Met	Arg	Lys	Asn	Val	Arg	Val	Leu	Gly	Val	Val	Thr
			100					105					110		
Asp	Gly	Arg	Ser	Gln	Asp	Glu	Val	Lys	Lys	Ala	Ala	Phe	Val	Ile	Gln
		115					120					125			
Gln	Ser	Gly	Phe	Ser	Val	Phe	Val	Val	Gly	Val	Ala	Asp	Val	Asp	Tyr
	130					135					140				
Asn	Glu	Leu	Ala	Asn	Ile	Ala	Ser	Lys	Pro	Ser	Glu	Arg	His	Val	Phe
145					150					155					160
Ile	Val	Asp	Asp	Phe	Glu	Ser	Phe	Glu	Lys	Ile	Glu	Asp	Asn	Leu	Ile
				165					170					175	
Thr	Phe	Val	Cys	Glu	Thr										
			180												

<210> 25

<211> 185

<212> PRT

<213> Artificial Sequence

<220>

<223> VA domain from collagen VI

<400> 25

Ala	Ala	Asp	Ile	Val	Phe	Leu	Val	Asp	Ser	Ser	Trp	Ser	Ala	Gly	Lys
1				5					10					15	
Asp	Arg	Phe	Leu	Val	Gln	Glu	Phe	Leu	Ser	Asp	Val	Val	Glu	Ser	
			20					25				30			
Leu	Ala	Val	Gly	Asp	Asn	Asp	Phe	His	Phe	Ala	Leu	Val	Arg	Leu	Asn
		35					40					45			
Gly	Asn	Pro	His	Thr	Glu	Phe	Leu	Leu	Asn	Thr	Tyr	His	Ser	Lys	Gln
	50					55					60				
Glu	Val	Leu	Ser	His	Ile	Ala	Asn	Met	Ser	Tyr	Ile	Gly	Gly	Ser	Asn
65					70					75					80
Gln	Thr	Gly	Lys	Gly	Leu	Glu	Tyr	Val	Ile	His	Ser	His	Leu	Thr	Glu
				85					90					95	
Ala	Ser	Gly	Ser	Arg	Ala	Ala	Asp	Gly	Val	Pro	Gln	Val	Ile	Val	Val
			100					105					110		
Leu	Thr	Asp	Gly	Gln	Ser	Glu	Asp	Gly	Phe	Ala	Leu	Pro	Ser	Ala	Glu
		115					120					125			
Leu	Lys	Ser	Ala	Asp	Val	Asn	Val	Phe	Ala	Val	Gly	Val	Glu	Gly	Ala
	130					135					140				
Asp	Glu	Arg	Ala	Leu	Gly	Glu	Val	Ala	Ser	Glu	Pro	Leu	Leu	Ser	Met
145					150					155					160
His	Val	Phe	Asn	Leu	Glu	Asn	Val	Thr	Ser	Leu	His	Gly	Leu	Val	Gly
				165					170					175	

Asn Leu Val Ser Cys Ile His Ser Ser
180 185

<210> 26
<211> 185
<212> PRT
<213> Artificial Sequence

<220>
<223> VA domain from matrilin-2

<400> 26
Arg Ala Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Asn Thr
1 5 10 15
Tyr Asp Tyr Ala Lys Val Lys Glu Phe Ile Leu Asp Ile Leu Gln Phe
20 25 30
Leu Asp Ile Gly Pro Asp Val Thr Arg Val Gly Leu Leu Gln Tyr Gly
35 40 45
Ser Thr Val Lys Asn Glu Phe Ser Leu Lys Thr Phe Lys Arg Lys Ser
50 55 60
Glu Val Glu Arg Ala Val Lys Arg Met Arg His Leu Ser Thr Gly Thr
65 70 75 80
Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu Asn Ile Ala Phe Ser Glu
85 90 95
Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn Val Pro Arg Ile Ile Met
100 105 110
Ile Val Thr Asp Gly Arg Pro Gln Asp Ser Val Ala Glu Val Ala Ala
115 120 125
Lys Ala Arg Asn Thr Gly Ile Leu Ile Phe Ala Ile Gly Val Gly Gln
130 135 140
Val Asp Leu Asn Thr Leu Lys Ala Ile Gly Ser Glu Pro His Lys Asp
145 150 155 160
His Val Phe Leu Val Ala Asn Phe Ser Gln Ile Glu Ser Leu Thr Ser
165 170 175
Val Phe Gln Asn Lys Leu Cys Thr Val
180 185

<210> 27
<211> 184
<212> PRT
<213> Artificial Sequence

<220>
<223> VA domain from matrilin-4

<400> 27
Pro Leu Asp Leu Val Phe Met Ile Asp Ser Ser Arg Ser Val Arg Pro
1 5 10 15
Phe Glu Phe Glu Thr Met Arg Gln Phe Leu Val Gly Leu Leu Arg Ser
20 25 30
Leu Asp Val Gly Leu Asn Ala Thr Arg Val Gly Val Ile Gln Tyr Ser
35 40 45
Ser Gln Val Gln Ser Val Phe Pro Leu Gly Ala Phe Ser Arg Arg Glu
50 55 60
Asp Met Glu Arg Ala Ile Arg Ala Val Val Pro Leu Ala Gln Gly Thr
65 70 75 80
Met Thr Gly Leu Ala Ile Gln Tyr Ala Met Asn Val Ala Phe Ser Glu

				85					90					95			
Ala	Glu	Gly	Ala	Arg	Pro	Ser	Glu	Glu	Arg	Val	Pro	Arg	Val	Leu	Val		
			100					105					110				
Ile	Val	Thr	Asp	Gly	Arg	Pro	Gln	Asp	Arg	Val	Ala	Glu	Val	Ala	Ala		
		115					120					125					
Gln	Ala	Arg	Ala	Arg	Gly	Ile	Glu	Ile	Tyr	Ala	Val	Gly	Val	Gln	Arg		
	130					135					140						
Ala	Asp	Val	Gly	Ser	Leu	Arg	Thr	Met	Ala	Ser	Pro	Pro	Leu	Asp	Gln		
145					150					155					160		
His	Val	Phe	Leu	Val	Glu	Ser	Phe	Asp	Ile	Gln	Glu	Phe	Gly	Leu	Gln		
			165					170						175			
Phe	Gln	Gly	Arg	Leu	Cys	Gly	Lys										
			180														

<210> 28
 <211> 185
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VA domain from matrillin-3

Pro	Leu	Asp	Leu	Val	Phe	Ile	Ile	Asp	Ser	Ser	Arg	Ser	Val	Arg	Pro		
1				5					10					15			
Leu	Glu	Phe	Thr	Lys	Val	Lys	Thr	Phe	Val	Ser	Arg	Ile	Ile	Asp	Thr		
			20					25					30				
Leu	Asp	Ile	Gly	Ala	Thr	Asp	Thr	Arg	Val	Ala	Val	Val	Asn	Tyr	Ala		
	35						40					45					
Ser	Thr	Val	Lys	Ile	Glu	Phe	Gln	Leu	Asn	Thr	Tyr	Ser	Asp	Lys	Gln		
	50					55				60							
Ala	Leu	Lys	Gln	Ala	Val	Ala	Arg	Ile	Thr	Pro	Leu	Ser	Thr	Gly	Thr		
65				70					75					80			
Met	Ser	Gly	Leu	Ala	Ile	Gln	Thr	Ala	Met	Glu	Glu	Ala	Phe	Thr	Val		
			85					90					95				
Glu	Ala	Gly	Ala	Arg	Gly	Pro	Met	Ser	Asn	Ile	Pro	Lys	Val	Ala	Ile		
			100					105					110				
Ile	Val	Thr	Asp	Gly	Arg	Pro	Gln	Asp	Gln	Val	Asn	Glu	Val	Ala	Ala		
	115						120					125					
Arg	Ala	Arg	Ala	Ser	Gly	Ile	Glu	Leu	Tyr	Ala	Val	Gly	Val	Asp	Arg		
	130				135						140						
Ala	Asp	Met	Glu	Ser	Leu	Lys	Met	Met	Ala	Ser	Lys	Pro	Leu	Glu	Glu		
145					150					155					160		
His	Val	Phe	Tyr	Val	Glu	Thr	Tyr	Gly	Val	Ile	Glu	Lys	Leu	Ser	Ala		
			165					170						175			
Arg	Phe	Gln	Glu	Thr	Pro	Cys	Ala	Leu									
			180					185									

<210> 29
 <211> 185
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VA domain from matrillin-1

<400> 29

Pro	Thr	Asp	Leu	Val	Phe	Val	Val	Asp	Ser	Ser	Arg	Ser	Val	Arg	Pro
1				5					10					15	
Val	Glu	Phe	Glu	Lys	Val	Lys	Val	Phe	Leu	Ser	Gln	Val	Ile	Glu	Ser
			20					25					30		
Leu	Asp	Val	Gly	Pro	Asn	Ala	Thr	Arg	Val	Gly	Leu	Val	Asn	Tyr	Ala
		35					40					45			
Ser	Thr	Val	Lys	Pro	Glu	Phe	Pro	Leu	Arg	Ala	His	Gly	Ser	Lys	Ala
	50					55					60				
Ser	Leu	Leu	Gln	Ala	Val	Arg	Arg	Ile	Gln	Pro	Leu	Ser	Thr	Gly	Thr
65					70				75					80	
Met	Thr	Gly	Leu	Ala	Leu	Gln	Phe	Ala	Ile	Thr	Lys	Ala	Leu	Ser	Asp
				85				90						95	
Ala	Glu	Gly	Gly	Arg	Ala	Arg	Ser	Pro	Asp	Ile	Ser	Lys	Val	Val	Ile
			100					105					110		
Val	Val	Thr	Asp	Gly	Arg	Pro	Gln	Asp	Ser	Val	Arg	Asp	Val	Ser	Glu
		115					120					125			
Arg	Ala	Arg	Ala	Ser	Gly	Ile	Glu	Leu	Phe	Ala	Ile	Gly	Leu	Gly	Arg
	130					135					140				
Val	Asp	Lys	Ala	Thr	Leu	Arg	Gln	Ile	Ala	Ser	Glu	Pro	Gln	Asp	Glu
145					150					155				160	
His	Val	Asp	Tyr	Val	Glu	Ser	Tyr	Asn	Val	Ile	Glu	Lys	Leu	Ala	Lys
				165					170					175	
Lys	Phe	Gln	Glu	Ala	Phe	Cys	Val	Val							
			180					185							

<210> 30

<211> 193

<212> PRT

<213> Artificial Sequence

<220>

<223> VA domain from VLA

<400> 30

Gln	Leu	Asp	Ile	Val	Ile	Val	Leu	Asp	Gly	Ser	Asn	Ser	Ile	Tyr	Pro
1				5					10					15	
Trp	Asp	Ser	Val	Thr	Ala	Phe	Leu	Asn	Asp	Leu	Leu	Lys	Arg	Met	Asp
			20					25					30		
Ile	Gly	Pro	Lys	Gln	Thr	Gln	Val	Gly	Ile	Val	Gln	Tyr	Gly	Glu	Asn
		35					40					45			
Val	Thr	His	Glu	Phe	Asn	Leu	Asn	Lys	Tyr	Ser	Ser	Thr	Glu	Glu	Val
	50					55					60				
Leu	Val	Ala	Ala	Lys	Lys	Ile	Val	Gln	Arg	Gly	Gly	Arg	Gln	Thr	Met
65					70				75					80	
Thr	Ala	Leu	Gly	Thr	Asp	Thr	Ala	Arg	Lys	Glu	Ala	Phe	Thr	Glu	Ala
				85				90						95	
Arg	Gly	Ala	Arg	Arg	Gly	Val	Lys	Lys	Val	Met	Val	Ile	Val	Thr	Asp
			100					105					110		
Gly	Glu	Ser	His	Asp	Asn	His	Arg	Leu	Lys	Lys	Val	Ile	Gln	Asp	Cys
		115					120					125			
Glu	Asp	Glu	Asn	Ile	Gln	Arg	Phe	Ser	Ile	Ala	Ile	Leu	Gly	Ser	Tyr
	130					135					140				
Asn	Arg	Gly	Asn	Leu	Ser	Thr	Glu	Lys	Phe	Val	Glu	Glu	Ile	Lys	Ser
145					150					155				160	
Ile	Ala	Ser	Glu	Pro	Thr	Glu	Lys	His	Phe	Phe	Asn	Val	Ser	Asp	Glu
				165					170					175	
Leu	Ala	Leu	Val	Thr	Ile	Val	Lys	Thr	Leu	Gly	Glu	Arg	Ile	Phe	Ala
			180					185					190		

Leu

<210> 31
<211> 181
<212> PRT
<213> Artificial Sequence

<220>
<223> VA domain from WARP

<400> 31
Gln Gly Asp Leu Leu Phe Leu Leu Asp Ser Ser Ala Ser Val Ser His
1 5 10 15
Tyr Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val Ala Thr
20 25 30
Met Ser Phe Gly Pro Gly Ala Leu Arg Ala Ser Leu Val His Val Gly
35 40 45
Ser Gln Pro His Thr Glu Phe Thr Phe Asp Gln Tyr Ser Ser Gly Gln
50 55 60
Ala Ile Arg Asp Ala Ile Arg Val Ala Pro Gln Arg Met Gly Asp Thr
65 70 75 80
Asn Thr Gly Leu Ala Leu Ala Tyr Ala Lys Glu Gln Leu Phe Ala Glu
85 90 95
Glu Ala Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp Val Thr
100 105 110
Asp Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu Leu Lys
115 120 125
Asp Leu Gly Val Thr Ile Phe Ile Val Ser Thr Gly Arg Gly Asn Leu
130 135 140
Leu Glu Leu Leu Ala Ala Ala Ser Ala Pro Ala Glu Lys His Leu His
145 150 155 160
Phe Val Asp Val Asp Asp Leu Pro Ile Ile Ala Arg Glu Leu Arg Gly
165 170 175
Ser Ile Thr Asp Ala
180

<210> 32
<211> 184
<212> PRT
<213> Artificial Sequence

<220>
<223> VA domain from cochlin

<400> 32
Lys Ala Asp Ile Ala Phe Leu Ile Asp Gly Ser Tyr Asn Ile Gly Gln
1 5 10 15
Arg Arg Phe Asn Leu Gln Lys Asn Phe Val Gly Lys Val Ala Val Met
20 25 30
Leu Gly Ile Gly Thr Glu Gly Pro His Val Gly Val Val Gln Ala Ser
35 40 45
Glu His Pro Lys Ile Glu Phe Tyr Leu Lys Asn Phe Thr Ala Ala Lys
50 55 60
Glu Val Leu Phe Ala Ile Lys Glu Leu Gly Phe Arg Gly Gly Asn Ser
65 70 75 80
Asn Thr Gly Lys Ala Leu Lys His Ala Ala Gln Lys Phe Phe Ser Met

				85					90					95		
Glu	Asn	Gly	Ala	Arg	Lys	Gly	Ile	Pro	Lys	Ile	Ile	Val	Val	Phe	Leu	
			100					105					110			
Asp	Gly	Trp	Pro	Ser	Asp	Asp	Leu	Glu	Glu	Ala	Gly	Ile	Val	Ala	Arg	
		115					120					125				
Glu	Phe	Gly	Val	Asn	Val	Phe	Ile	Val	Ser	Ser	Val	Ala	Lys	Pro	Thr	
	130					135					140					
Thr	Glu	Glu	Leu	Gly	Met	Val	Gln	Asp	Ile	Gly	Phe	Ile	Asp	Lys	Ala	
145					150					155					160	
Val	Cys	Arg	Asn	Asn	Gly	Phe	Phe	Ser	Tyr	Gln	Met	Pro	Ser	Trp	Phe	
			165						170					175		
Gly	Thr	Thr	Lys	Tyr	Val	Lys	Pro									
			180													

<210> 33
 <211> 186
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VA domain from vwf

<400> 33																
Leu	Leu	Asp	Leu	Val	Phe	Leu	Leu	Asp	Gly	Ser	Ser	Arg	Leu	Ser	Glu	
1				5					10					15		
Ala	Glu	Phe	Glu	Val	Leu	Lys	Ala	Phe	Val	Val	Asp	Met	Met	Glu	Arg	
			20					25					30			
Leu	Arg	Ile	Ser	Gln	Lys	Trp	Val	Arg	Val	Ala	Val	Val	Glu	Tyr	His	
		35					40					45				
Asp	Gly	Ser	His	Ala	Tyr	Ile	Gly	Leu	Lys	Asp	Arg	Lys	Arg	Pro	Ser	
	50					55				60						
Glu	Leu	Arg	Arg	Ile	Ala	Ser	Gln	Val	Lys	Tyr	Ala	Gly	Ser	Gln	Val	
65				70					75					80		
Ala	Ser	Thr	Ser	Glu	Val	Leu	Lys	Tyr	Thr	Leu	Phe	Gln	Ile	Phe	Ser	
			85					90					95			
Lys	Ile	Asp	Arg	Pro	Glu	Ala	Ser	Arg	Ile	Ala	Leu	Leu	Leu	Met	Ala	
			100					105					110			
Ser	Gln	Glu	Pro	Gln	Arg	Met	Ser	Arg	Asn	Phe	Val	Arg	Tyr	Val	Gln	
		115					120					125				
Gly	Leu	Lys	Lys	Lys	Lys	Val	Ile	Val	Ile	Pro	Val	Gly	Ile	Gly	Pro	
	130					135					140					
His	Ala	Asn	Leu	Lys	Gln	Ile	Arg	Leu	Ile	Glu	Lys	Gln	Ala	Pro	Glu	
145				150						155					160	
Asn	Lys	Ala	Phe	Val	Leu	Ser	Ser	Val	Asp	Glu	Leu	Glu	Gln	Gln	Arg	
			165						170					175		
Asp	Glu	Ile	Val	Ser	Tyr	Leu	Cys	Asp	Leu							
			180					185								

<210> 34
 <211> 85
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> F3-3 repeats from collagen XII

<400> 34

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Pro Arg Asn Leu Lys Val Thr Asp Glu Thr Thr Asp Ser Phe Lys Ile
 1           5           10           15
Thr Trp Thr Gln Ala Pro Gly Arg Val Leu Arg Tyr Arg Ile Ile Tyr
          20           25           30
Arg Pro Val Ala Gly Gly Glu Ser Arg Glu Val Thr Thr Pro Pro Asn
          35           40           45
Gln Arg Arg Arg Thr Leu Glu Asn Leu Ile Pro Asp Thr Lys Tyr Glu
          50           55           60
Val Ser Val Ile Pro Glu Tyr Phe Ser Gly Pro Gly Thr Pro Leu Thr
65           70           75           80
Gly Asn Ala Ala Thr
          85

```

<210> 35
 <211> 86
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> F3-12 repeats from fibronectin

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<400> 35
Pro Ser Gln Met Gln Val Thr Asp Val Gln Asp Asn Ser Ile Ser Val
 1           5           10           15
Arg Trp Leu Pro Ser Thr Ser Pro Val Thr Gly Tyr Arg Val Thr Thr
          20           25           30
Thr Pro Lys Asn Gly Leu Gly Pro Ser Lys Thr Lys Thr Ala Ser Pro
          35           40           45
Asp Gln Thr Glu Met Thr Ile Glu Gly Leu Gln Pro Thr Val Glu Tyr
          50           55           60
Val Val Ser Val Tyr Ala Gln Asn Arg Asn Gly Glu Ser Gln Pro Leu
65           70           75           80
Val Gln Thr Ala Val Thr
          85

```

<210> 36
 <211> 87
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> F3-2 repeats from WARP

```

<400> 36
Pro Glu Arg Ile Val Ile Ser His Ala Arg Pro Arg Ser Leu Arg Val
 1           5           10           15
Ser Trp Ala Pro Ala Leu Gly Pro Asp Ser Ala Leu Gly Tyr His Val
          20           25           30
Gln Leu Gly Pro Leu Gln Gly Gly Ser Leu Glu Arg Val Glu Val Pro
          35           40           45
Ala Gly Gln Asn Ser Thr Thr Val Gln Gly Leu Thr Pro Cys Thr Thr
          50           55           60
Tyr Leu Val Thr Val Thr Ala Ala Phe Arg Ser Gly Arg Gln Arg Ala
65           70           75           80
Leu Ser Ala Lys Ala Cys Thr
          85

```

<210> 37
<211> 88
<212> PRT
<213> Artificial Sequence

<220>
<223> F3-3 repeats from beta-4 integrin

<400> 37
Pro Thr Arg Leu Val Phe Ser Ala Leu Gly Pro Thr Ser Leu Arg Val
1 5 10 15
Ser Trp Gln Glu Pro Arg Cys Glu Arg Pro Leu Gln Gly Tyr Ser Val
20 25 30
Glu Tyr Gln Leu Leu Asn Gly Gly Glu Leu His Arg Leu Asn Ile Pro
35 40 45
Asn Pro Ala Gln Thr Ser Val Val Val Glu Asp Leu Leu Pro Asn His
50 55 60
Ser Tyr Val Phe Arg Val Arg Ala Gln Ser Gln Glu Gly Trp Gly Arg
65 70 75 80
Glu Arg Glu Gly Val Ile Thr Ile
85

<210> 38
<211> 85
<212> PRT
<213> Artificial Sequence

<220>
<223> F3-5 repeat from collagen XIV

<400> 38
Pro Gln His Leu Glu Val Asp Glu Ala Ser Thr Asp Ser Phe Arg Val
1 5 10 15
Ser Trp Lys Pro Thr Ser Ser Asp Ile Ala Phe Tyr Arg Leu Ala Trp
20 25 30
Ile Pro Leu Asp Gly Gly Glu Ser Glu Glu Val Val Leu Ser Gly Asp
35 40 45
Ala Asp Ser Tyr Val Ile Glu Gly Leu Leu Pro Asn Thr Glu Tyr Glu
50 55 60
Val Ser Leu Leu Ala Val Phe Asp Asp Glu Thr Glu Ser Glu Val Val
65 70 75 80
Ala Val Leu Gly Ala
85

<210> 39
<211> 85
<212> PRT
<213> Artificial Sequence

<220>
<223> F3-7 repeat from tenascin-R

<400> 39
Pro Lys Asp Ile Thr Ile Ser Asn Val Thr Lys Asp Ser Val Met Val
1 5 10 15
Ser Trp Ser Pro Pro Val Ala Ser Phe Asp Tyr Tyr Arg Val Ser Tyr

